DELAWARE RIVERKEEPER NETWORK

To: Water Quality Advisory Committee

From: Maya K. van Rossum, the Delaware Riverkeeper & Erik Silldorff, Senior Scientist, Delaware Riverkeeper Network

Date: Sept 27, 2019

Re: Concerns Regarding Draft Non-DO Estuary Nutrient Endpoints; Opposition Regarding Proposal to Limit Nutrient Focus to DO Endpoint Only; Proposed Alternative Resolution for Scientifically Defensible and Valid Next Steps Honoring the DRBC Stakeholder Committee System

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The Delaware Riverkeeper Network does not believe that focusing only on Dissolved Oxygen in setting numeric nutrient criteria is scientifically defensible; nor do we think having the DRBC unilaterally proposing a DO-only strategy is in keeping with the practice of the DRBC or the WQAC to ensure decisions include and engage representative stakeholders in the decisionmaking process.

The Delaware Riverkeeper Network proposes an alternative resolution for consideration by the Water Quality Advisory Committee at its September 30, 2019 meeting regarding advancing numeric nutrient criteria for the Delaware River and Estuary.

Setting nutrient criteria using a Dissolved Oxygen Only endpoint is not scientifically defensible. DRBC has proposed using a single chemical endpoint, Dissolved Oxygen, as the sole basis for setting numeric nutrient criteria in the tidal Delaware River & Estuary. The Delaware Riverkeeper Network strongly opposes this narrow, unsupportable approach for dealing with the multiple impacts of anthropogenically-elevated nitrogen and phosphorus in our River's complex ecosystems.

- The DRBC DO-Only approach fails to recognize that the tidal Delaware River & Estuary is among the most nutrient-rich estuaries in the United States and the world. A wealth of scientific literature and direct comparisons have documented the human-induced increases in both nitrogen and phosphorus here in the Delaware, and the continued high concentrations and loadings relative to other regional and world-wide estuaries.

- The DRBC fails to recognize that there is strong scientific consensus that both the assessment of coastal eutrophication and the broader assessment of a river's ecological health requires the evaluation of multiple chemical and biological endpoints. Across a range of federal and state agencies (e.g., USEPA, NOAA, NJDEP, PADEP, DNREC), coastal systems traditionally are

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evaluated by measuring and assessing water quality parameters such as Dissolved Oxygen in concert with a suite of additional chemical and biological endpoints.

- The DRBC-commissioned study by the Academy of Natural Sciences demonstrates the multiple and complex pathways by which nutrients affect aquatic ecosystems and confirms that a DO-Only approach fails to consider or address the ecological needs of the Delaware River system.

While the DRBC DO-Only "shortcut" approach (i.e., looking at a single chemical endpoint) for setting nutrient criteria could conceivably be appropriate in an estuarine setting with naturally low nutrient concentrations, in an estuary that has among the highest nutrient concentrations and loadings in the world, such a shortcut approach could be devastating and forever alter the restoration trajectory of the Delaware River's ecologically and economically critical ecosystems.

Setting scientifically and legally defensible nutrient criteria demands evaluation of endpoints and responses specific to the Delaware River.
Instead of a "fringe" idea brought forth by only a minority of DRBC's stakeholders, a multiple-endpoint approach to assessing and setting nutrient criteria is the mainstream scientific approach for addressing complex ecosystems such as the Delaware Estuary. From the Chesapeake Bay to Barnegat Bay to the San Francisco Bay, coastal eutrophication is recognized as a many-faceted challenge with a multitude of harmful impacts the solutions for which require careful consideration of multiple endpoints as well as the specific ecosystem's response.

DRBC has a long history of grounding its decisions in science. By contrast, advancing a DO-Only approach for setting nutrient criteria ignores decades of scientific consensus and threatens DRBC with credible accusations that they are being guided by political expedience rather than credible and defensible scientific findings and its obligations as a multi-state regulatory commission to protect the water resources and many stakeholders of the Delaware River basin

DRBC must prioritize raising the Dissolved Oxygen criteria of the Delaware Estuary from 3.5 mg/l to 6.3 mg/l in order to protect fish populations and secure needed near-term reductions in nutrient contamination in the Delaware.
To advance near term reductions in nutrient loadings, to address the acknowledged weakness of current DRBC DO criteria, to protect fish propagation and migration, and to support increasing the Delaware River fishery including related commercial and recreational benefits, the DRBC must prioritize raising the Estuary DO criteria to a minimum of 6.3 mg/l in keeping with the findings of the Academy of Natural Sciences' earlier evaluation of the DO requirements of estuary-specific species.

DRBC should re-constitute the nutrient subcommittee in order to consider the appropriate set of endpoints for assessing needed nutrient reductions.
In order for any proposed nutrient criteria for the Delaware Estuary to be scientifically defensible and protective of the estuary's existing and designated uses, DRBC must harness the resources and knowledge of experts, stakeholders, and the underlying science to develop criteria that would not only address dissolved oxygen limitations, but better protect the River's entire ecological system. DRN proposes that the WQAC revive its nutrient subcommittee in order to consider and drive a scientifically-based process to identify the appropriate chemical and biological endpoints to measure, and to assess the concentrations and loadings of nutrients that will protect and/or restore the many designated and existing uses of Delaware River waters.

In sum, the WQAC should pass a resolution that rejects a DO-only approach to nutrient criteria, supports passage of strengthened oxygen criteria, and recommends that DRBC utilize the standard and accepted committee structure to enlist the appropriate experts, stakeholders and resources to identify the scientifically appropriate set of endpoints for developing Delaware River specific nutrient criteria.

DRN proposes the passage of a resolution whereby the WQAC:

1. formally rejects the proposal from DRBC to consider only a single chemical endpoint, Dissolved Oxygen, for developing nutrient criteria in the Delaware Estuary;
2. recommends that DRBC reconstitute the Nutrient Subcommittee to assess and recommend the appropriate endpoints upon which to base revised nutrient criteria, and undertake the challenge of setting fully protective nutrient criteria for the tidal Delaware River & Estuary; and
3. take strides towards addressing high nutrient loadings and needed dissolved oxygen levels by passing, within the next 12 months, revised dissolved oxygen criteria of 6.3 mg/l for the entire Delaware Estuary.